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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,270	08/06/2003	Robert E. Uber		8432

7590 10/06/2005
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EXAMINER

PHAM, HOA Q

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/635,270	Applicant(s) UBER, ROBERT E.	
	Examiner Hoa Q. Pham	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/3/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. The drawings filed on 8/6/03 have been approved.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimble et al (4,200,399) in view of Oehler et al (4,740,086).

Regarding claims 1 and 11, Kimble et al (of record) discloses a resonant optoacoustic spectroscopy apparatus which has all the features of the present invention except for the use of an acoustic pressure attenuating element through which the sensing volume of a photoacoustic detector is in fluid connection with the environment such that the analyte gas can diffuse into the sensing volume through the acoustic pressure attenuating element; however, such a feature is known in the art as taught by Oehler et al. Oehler et al (of record), from the same field of endeavor, teaches the "use of an acoustic pressure attenuating element (52') through which the sensing volume of a photoacoustic detector (35) is in fluid connection with the environment such that the analyte gas can diffuse into the sensing volume through the acoustic pressure attenuating element" (column 5, lines 56-60 and figure 9). It would have been obvious to

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one having ordinary skill in the art at the time the invention was made to rearrange the optical elements of Kimble et al as taught by Oehler et al. The rationale for this modification would have arisen from the fact that using such arrangement would allow the gas exchange to take place between the gas collecting point and the photoacoustic gas detector, purely passively by gas diffusion through the diaphragm, instead of requiring a pump.

Regarding claims 2 and 12; Kimble et al teaches that the gas flow into the resonant cavity volume have to be small in order for this volume not to have any affect, thus, it would have been obvious to use a capillary tube instead of the opening (36) of Kimble because they both function in the same manner.

Regarding claims 3-5 and 13-15, see figure 9 of Oehler et al for the use of microphone (36) which connected to the detector volume (35') through a small channel, in close proximity to the acoustic pressure attenuating element (52').

Regarding claims 6, 7, 16, and 17; see column 3, lines 28-29 of Kimble et al for the diffusion rate.

Regarding claims 8 and 18, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a rigid membrane mounted to a flexible support, instead of a flexible membrane because they are function in the same manner.

Regarding claims 9, 10, 19 and 20; it would have been obvious to made the sensing volume and pressure sensor volume equal in size for the purpose of determining the initial response time (see column 3, lines 11-16 of Kimble et al).


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4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Following references are relative to gas sensor: Tantram et al (4,324,632) and Forster (6,006,585).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-2426. The examiner can normally be reached on 7:30AM to 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hoa Q. Pham
Primary Examiner
Art Unit 2877

HP
September 29, 2005